



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,296	05/17/2005	Mark T. Johnson	NL 021320	5856
24737 7590 04/09/2008 PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510				
EXAMINER				
CHOW, YUK				
ART UNIT		PAPER NUMBER		
2629				
MAIL DATE		DELIVERY MODE		
04/09/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/535,296

Applicant(s)

JOHNSON ET AL.

Examiner

YUK CHOW

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01/07/2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Oath/Declaration

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

It does not state that the person making the oath or declaration acknowledges the duty to disclose to the Office all information known to the person to be material to **patentability** as defined in 37 CFR 1.56.

The applicant's declaration states:

I acknowledge the duty to disclose information which is material to the **examination** of this application in accordance with Title 37, Code of Federal Regulations, § 1.56(a).

Correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-15, 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanada (US 2002/0047550 A1) in view of Salam (US Patent 6,329,758).

As to **claim 1**, Tanada discloses a method of improving the output uniformity of a display, comprising the following steps:

determining the non-uniformity of an output of a driver circuit connected with the at least one pixel base on the first emitted brightness (see [0119]);

generating a calibration factor (Fig. 2C(B2)) for the at least one pixel based on the non-uniformity, to be used to modify the output of the driver circuit (Fig. 1(111)), to improve the uniformity.

However, Tanada does not teach detecting a first emitted brightness of at least one pixel of the display device via an external detection system that is substantially independent of the display device.

Salam discloses a LED matrix display, wherein teaches an external detection system that is substantially independent of the display device (see Salam Fig. 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize external detection system as in Salam with the method of improving the output uniformity of Tanada, because this would result with a low-cost matrix drive system and free from the dynamic effects (see Salam Col. 2 lines 6-19).

As to **claim 2**, Tanada and Salam disclose a method of claim 1, wherein said display device is a self light emitting display device (see Tanada title).

As to **claim 3**, Tanada and Salam disclose a method of claim 1 or 2, wherein the display device is an organic light emitting diode based display device (see Tanada Fig. 7B(5035) and [0164]).

As to **claim 4**, Tanada and Salam disclose a method of claim 1, including:

adjusting an average display brightness (see Tanada [0106], standard brightness), detecting a second emitted brightness of the at least one pixel (Fig. 1(101B)), and

generating the calibration factor based on the first and second detected brightnesses (see Tanada [0106]-[0107]).

As to **claim 5**, Tanada and Salam disclose a method of claims 1, wherein the external detection system includes an external imaging system (see Salam Fig. 1(21-23)).

As to **claim 6**, Tanada and Salam disclose a method of claims 1, wherein the driver circuit is one of a pixel driver circuit or a data driver circuit (see Tanada Fig. 4A(403)).

As to **claim 7**, Tanada and Salam disclose a method of claims 1, wherein the display device is an active matrix polymer (see Tanada Fig. 5A-5C, show an example of a process of producing an active matrix self light emitting device) or organic light emitting diode display device (see Tanada Fig. 7B(5035) see [0164]).

As to **claim 8**, Tanada and Salam disclose a method of claim 7, wherein detecting the emitted brightness of at least one pixel individually detecting the emitted brightness for each of a plurality of pixels (see Tanada [0130], brightness detection in each pixel is discussed).

As to **claim 9**, Tanada and Salam disclose a method of claim 7, includes aligning, in one of a column or a row of pixels, all transistors of all pixels in a direction of

a laser beam during a laser recrystallisation during the fabrication of the transistors (see Tanada [0163] YAG laser is used).

As to **claim 10**, Tanada and Salam disclose a method of claims 1, wherein the display device is a passive matrix polymer or organic light emitting diode display device (see Tanada Fig. 7B(5035) and [0164]).

As to **claim 11**, Tanada and Salam disclose a method of claims 1, wherein detecting the emitted brightness of at least one pixel includes jointly measuring the emitted brightness of a group of pixels (see Tanada [0120]), commonly controlled by a common driving device (Fig. 2A(Gate Signal Line)).

As to **claim 12**, Tanada and Salam disclose a method of claim 1, including storing the calibration factors in a memory device (see Tanada Fig. 1(104)) associated with the driver device circuit.

As to **claim 13**, Tanada discloses a system comprising:
a unit (Fig. 11A(3301)) for holding a display device to be calibrated,
a feedback system that is configured to communicated information based on the emitted brightness to the display device to facilitate improvement of output brightness uniformity by adjustment of one or more drivers of the display device (see Fig. 1, driver 111 is fed to memory circuit 100 then to correction circuit. Back to display).

However, Tanada does not teach a detection system that is substantially independent of display device and configured to detect emitted brightness from the entire display device surface of the display device.

Salam discloses a LED matrix display, wherein teaches an external detection system that is substantially independent of the display device (see Salam Fig 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize external detection system as in Salam with the method of improving the output uniformity of Tanada, because this would result with a low-cost matrix drive system and free from the dynamic effects (see Salam Col. 2 lines 6-19).

As to **claim 14**, Tanada and Salam disclose a system according to claim 13, wherein the display device is a self light emitting display device (see Tanada Fig. 7B(5035) see [0164]).

As to **claim 15**, Tanada discloses a display device that is configured to receive information based on an emitted brightness of one or more pixels of the display device (see Fig. 1, driver 111 is fed to memory circuit 100 then to correction circuit. Back to display).

However, Tanada does not teach receiving information from an external detector that is independent of the display device, and includes at least one component of at least one driver that is adjusted based on the information to improve an output brightness uniformity of the display device.

Salam discloses a LED matrix display, wherein teaches an external detection system that is substantially independent of the display device (see Salam Fig. 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize external detection system as in Salam with the method of

improving the output uniformity of Tanada, because this would result with a low-cost matrix drive system and free from the dynamic effects (see Salam Col. 2 lines 6-19).

As to **claim 18**, Tanada and Salam disclose a method of claim 1, including laser trimming of one or more transistors associated with the driver circuit (See Tanada [0137],[0157],[0163]).

As to **claim 20**, Tanada and Salam disclose a display device of claim 15, wherein the at least one component includes one or more transistors that are laser trimmed based on the information (See Tanada [0137],[0157],[0163]).

4. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanada and Salam in further view of Hack et al (US 2002/0030647 A1).

As to **claim 16**, Tanada and Salam disclose display device as defined in claim 15, wherein the display device comprises a plurality of light emitting pixels being arranged in a row and column structure, wherein either each column or each row of pixels is connected with a data driver circuit (see Tanada Fig. 4A, 4B).

However, Tanada and Salam do not teach each column or row includes a current measurement device, and a controller that is configured to adjust an output of the data driver circuit based on a relative change over time of current detected by the current measurement device.

Hack discloses a uniform active matrix OLED display wherein teaches an additional non-light emitting circuitry component (Fig. 7(500)), incorporating a current sensor circuit (Fig. 8(70)).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize a current sensing device of Hack into self light emitting display device of Tanada and Salam, because the brightness of a light emitting device is directly related to the supplying current. In order to produce a proper brightness on a pixel by pixel basis throughout the lifetime of the display, a current sensor circuit allows monitoring current-voltage characteristics of the pixels (see Hack [0016]).

5. Claims 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanada and Salam in further view of Henson (US Patent 6,133,054).

As to **claims 17 and 19**, Tanada and Salam disclose a method of claims 1 and 15 respectively.

However, Tanada and Salam do not teach component including burning fuses on a circuit associated with the driver circuit.

Henson discloses a method for testing an integrated circuit wherein teaches fuse structures (Fig. 3, 4, 5 (106)) which enable integrated circuit to be tested.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize a method of burning fuses as in Henson, into self light emitting display device of Tanada and Salam, because this method reduces the risk of unnecessarily rejects and increases the reliability of integrated circuit (see Henson Col. 6 lines 28-54).

Response to Arguments

6. Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YUK CHOW whose telephone number is (571)270-1544. The examiner can normally be reached on 8-6 M-TH E.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on 571 272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2629

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Y. C./

Art Unit 2629

/Amare Mengistu/

Supervisory Patent Examiner, Art Unit 2629